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ORIGINAL.

MOTOR INSUFFICIENCY OF THE STOMACH.

BY DR. S. C. NORRIS.
ANDERSON, IND.

By motor insufficiency of the stomach is meant a dynamic affection of the gastric musculature, which prevents the organ from completely emptying itself into the intestines after meals, within the period of time in which it should physiologically accomplish this task.

A short time ago, I read in a medical journal about a prominent and able obstetrician, present at a society meeting when they were discussing the frequency of perineal laceration following parturition. When called upon for his experience, the venerable gentleman startled all present by remarking, "That in a practice of over forty years, and an attendance at over five thousand births, he had encountered only one case of laceration, and the nurse had called his attention to *that*." When asked if he looked at every case to see if it were lacerated, there promptly came the explanatory answer, "Well, not particularly." This applies equally well to the subject in hand to-night. If we look particularly for it, I am convinced that we will find this affection to be one of the main, if not the essential factor in that large class of benign affections including under the generic term "stomach trouble," and which are so notoriously rebellious to the time honored pepsin, bismuth, nux vomica and hydrochloric acid system of therapeutics.

For facility of consideration we will divide the subject into two distinct classes. First, Those cases presenting a neoplastic obstruction to the free and ready egress of the stomach contents. These are essentially pyloric and duodenal affections, in which the motor insufficiency is clearly a condition of muscle exhaustion, from an endeavor to overcome the obstruction. Second, those cases in which there is no neoplastic obstruction to the outflow, and the motor insufficiency, or muscle weakness is the affection "per se," or the principal factor in the morbid process. It is wholly with this second class of cases that this paper treats.

This affection occurs regardless of sex, and at all ages. In some families there seems to be an hereditary weakness of the involuntary muscular system, as it is not uncommon to find several members of the same family suffering from this affection. By some the disease is thought to be of ner-

*Read before the Harvey Medical Society, une 18, 1901.

vous origin. A diseased or unstable nervous system may undoubtedly be a factor in its causation, but the disease itself is essentially muscular, that is the muscle is insufficient, because it is degenerated and too weak to properly perform its physiological function. In many cases the foundation for this affection is unthinkingly laid during the period of convalescence from attacks of severe adynamic diseases. When the involuntary muscles are in a particularly weakened condition, overfeeding, with an unsuitable diet, overtaxes the gastric musculature,and gives rise to the first step of the morbid process. Excessive mental fatigue, accidents, shock, fear, depressing moral causes, and grave misfortunes often produce a mild and temporary form of the disease. All general affections resulting in malnutrition and subnutrition are certainly predisposing causes of this trouble. Myasthenia *itself* may arise as a complication of a number of other stomach affections, particularly chronic gastritis of the hypersthenic form. Dietetic errors, especially the indulgence in very large and bulky meals of heavy and coarse food, with large amounts of liquid, by stretching and fatiguing the gastric muscle, when frequently repeated leads directly to the disease in question. The ingestion of large amounts of liquids, is especially prone to give rise to, and augment this trouble; hence its frequent designation as "dyspepsia of liquids." It is important to bear this in mind when recommending large amounts of milk and soups to the aged, the weak, and convalescents.

It is to be born in mind that this condition has nothing to do with the position or size of the stomach, as a displaced or enlarged organ may be able to empty itself completely within the specified time; while a stomach of normal size, and in its normal position may be wholly unable to do so. Let us bear in mind then that this condition is one of impaired motility only.

Clinically considered, it is most convenient to divide these cases into three classes. First, Those in which there is a retardation of food in the stomach, although it does empty itself between meals, only occupying more time than normal in doing so. Second. Those in which there is a degree of stagnation; during the day the stomach fails to empty itself between meals, but does manage to do so through the longer interval of the night. Third, Those in which there is a degree of retention throughout the whole twenty-four hours,and the stomach is never entirely empty. These conditions are conveniently designated respectively, retardation, stagnation and retention. The first and second are very amenable to appropriate treatment, but the third class is an altogether more serious affair, owing to the dilatation allowed by the progressively weakening muscle, combined with the weight of the retained food. It is to be remembered that in many of these cases,chemical digestion itself is carried on in an approximately normal manner, while in others the impaired motility may be complicated by a number of faults in the chemical digestive process, that add considerably to the gravity, and likewise the difficulty of successfully treating the case.

The disease is usually of slow development, and in the beginning is marked by periods of latency lasting from a few days to as many weeks or several months, until some unusual happening, extra mental or physical

exertion, dietetic error or indiscretion serves to remind the victim that he is the unfortunate possessor of a weak gastric muscle. The development of these periods of latency are so frequent that the patients are rarely able to say exactly when the trouble did commence, and the direct question as to its commencement, elicits the almost universal answer, "I have been troubled off and on for a long time."

The symptoms of the mild form of the disease are digestive, that is in the early morning hours, and when the stomach is empty, the patient is free from distress and feels very comfortable. After the lapse of a variable interval following a meal, a sense of uneasiness, heaviness and distress, with a certain amount of distension is experienced. Three to four hours later the conditions are more distressing, the distention is sufficient to cause the clothes to be loosened, and at short intervals a few moments relief are experienced after belching one or more large mouthfuls of gas, usually with the remark. "Excuse me, I ate too much dinner." And it is evident that he has, at least too much for *his* stomach to take care of physiologically. Later on the belching may bring up a little sour tasting food, and after a number of hours of misery, as the stomach lazily and tardily empties itself into the duodenum comes relief from the burden. The duration and intensity of the symptoms depend upon the degree to which the gastric muscle is involved, and the quantity and quality of the food. Appearing at first only after the large meal of the day, then as the muscle becomes more and more compromised, and the disease progresses from the stage of retardation to one of stagnation, all the symptoms are increased in severity, and the suffering extends from one meal to the other and late into the night. The only hours of comfort being those of the early morning and directly after breakfast, unless, as frequently happens at this stage, the period of suffering is cut short several hours after a meal, by free and copious vomiting, which temporarily relieves the stomach from its embarrassment. A symptom to be noted particularly is the behavior of these stomachs to the quality of the food furnished. In this condition the more liquid the food, the longer the period of distress, and in many cases a large glass of water or milk will cause more trouble than a fairly large meal of solid food. I desire to mention here that in some cases the chemical function of digestion may also be at fault, but in the largest number of cases the fault is wholly mechanical, caused by the weak, flaccid, easily distended and feebly contracting gastric muscle. With this fact well in mind, the above enumerated symptoms will be fully understood, which renders further comment on them unneccessary. In these milder forms of the disease, the balance of nutrition is fairly well maintained, but it is a very difficult matter to increase the weight or strength of these patients. The disease in this form may remain stationary for a long period of time, but the lengthened interval of digestion imposes extra hours of mechanical work upon the already weakened muscle, which accomplishes its task with ever and ever greater difficulty, until, as a natural sequence it reaches the point where it is no longer able to accomplish its complete evacuation into the intestine within the whole twenty-four hours. The case now enters the much more serious class of "retention," with its consequent dilatation, and the symptomotology and the whole

aspect of the case changes. The patient's rest is now disturbed, and he arises after a restless night with a headache, and is distressed and tired. The appetite fails, and thirst increases in proportion to the system's loss of water by retention and vomiting. To drink only adds to the trouble, as the fluid is not absorbed from the stomach, and does not pass into the intestines, but only adds to the weight and distention of the already over-burdened organ. Immediately after meals, the abdomen becomes heavy and distended, fermentation in the retained ingesta takes place, and repeated belching brings up large quantities of gas; often bringing with it into the mouth small quanties of sour and bitter fluid. If there is buteric acid fermentation or putrefaction, there is nausea and very likely vertigo. The increased acidity, occasioned by the prolonged retention of contents at the point of high acidity of full digestion, augmented by the acids of fermentation when present, causes a burning pain in the region of the epigastrium, of which the sufferer complains bitterly. There is obstinate constipation owing to the smallamount of stomach contents entering the intestines, and the general lack of fluids in the system. The stools may be reduced from the normal 4 to 6 ounces to 1½ or even 1 ounce in the twenty-four hours. The lack of water also greatly reduces the quantity of urine, which is high colored, and possesses a high specific gravity. The chlorides are greatly reduced, as is the total acidity, by the retention in the stomach, and the removal of so much chlorine from the system, by the copious effortless vomiting, which now takes place every second or third day. This is nature's spasmodic and usually ineffectual effort to relieve the body of a burden, with which it is entirely unable to cope in the natural manner. The vomited material is very characteristic. It is large in amount, yellowish or brownish in color, of bad odor, and contains much mucus. It is very acid, sometimes bitter, and upon standing separates into three distinct layers. The upper one is foamy and consists of fatty and oily matters; the middle one is fluid and cloudy, while in the bottom of the receptacle collects the food detritus, mixed with an aggregated collection of germ life, evidenced by the supply of gas bubbles continually arising and carrying small food particles with them.

The emaciation is now rapid, because the system is deprived of a sufficient supply of food, and the small quantity of which finds its way into the intestines, is in such an unhygienic condition, by reason of the contained germs and their products, that it is more of an irritant than a food. This frequently leads to intestinal complications. All the body fluids are so concentrated that they quickly bring about sluggish and imperfect action in nearly all the organs of the body; which offers the opportunity for the development of a number of secondary troubles, the list of which is too long for enumeration at this time. Unless the retrograde process is arrested by vigorous and continued treatment, the unhappy and suffering mortal is quickly reduced to a degree of exhaustion, the rational sequence of which is speedy dissolution, unless, as is often the case, kind Providence brings about an earlier termination of the suffering, by means of some acute secondary complication.

If carefully investigated, and the numerous means at the command of the physician are used systematically, and the examinations thoroughly and

consistently carried to a conclusion there should be no very great difficulty in making the diagnosis of this condition.

The complete clinical history of the subjective symptoms, obtained by judicious interrogation, will bear a decided resemblance to the symptoms enumerated above; but as many of these are common to other gastric affections, it is an impossibility to make a positive diagnosis from this alone, although it may be very suggestive.

Physical examination reveals the degree of emaciation if any, also a weak flaccid abdominal wall, perhaps somewhat prominent in the epigastric region if examined several hours after a meal. The abdomen in this region is somewhat tender to the touch, and a decided weakness of the abdominal muscles upon contraction, is almost invariably noticed.

The size and position of the stomach are to be determined as accurately as possible, by the usual means of palpation, percussion and auscultatory percussion, also by means of inflation with gas or air, when the outline is brought more prominently into view, and percussion is likewise facilitated. A much quicker and more satisfactory way of determining the position and size of the stomach is by means of the gyromele and gastrodiaphane, when these instruments are at hand. It is to be borne in mind that the position and size of the stomach have a certain bearing on each case, still this condition of motor insufficiency is not incompatible with a stomach normal in size and position. The region of the pylorus must be most carefully examined for any evidence of obstruction, which, if detected, removes the case from the class under consideration, unless the obstruction should prove to be simply a spasm of the pylorus, occasioned by the very acid gastric contents. In this case the obstruction disappears quickly upon thorough lavage of the stomach. This condition of pyloric spasm in connection with simple myasthenia, is not so rare as is generally supposed, but like the obstetricians cases of laceration, are very easily overlooked. A sign of considerable diagnostic importance is splashing sounds, produced in the stomach. A strong healthy stomach does not produce splashing sounds, except rarely during the momentary relaxation of the muscle. Splashing sounds elicited shortly after the ingestion of food or liquid, and persisting for a number of hours, is highly characteristic of motor insufficiency, and by careful examination at the proper time can be heard in all cases of this trouble. If pyloric obstruction, continuous and excessive secretion are excluded, their continued presence is a positive indication of a degree of motor insufficiency.

There have been devised a number of processes of determining the stomach motility by means of the absorption and elimination of salol, olive oil and a number of other substances. Theoretically these processes are very beautiful, but in practice there are many and decided individual objections to their use, and their results vary so widely, even in health, that the limited knowledge obtained is hardly worth the time and trouble required in their use. The time, quantity and quality of the last meal being ascertained, the introduction of the tube, and the withdrawal of the contents give positive information of the state of affairs in the stomach at that time. From the knowledge thus obtained, the condition of the tonicity of the gastric muscle can be very accurately determined. A chemical analy-

sis of the contents will instruct us as to that function of digestion, and if necessary a microscopical examination will inform us as to the germ life going on in the organ.

Now if the stomach is washed out clean, using sufficient water until the returning stream is perfectly clear, withdrawing, of course, all the water and leaving the stomach empty. Instruct the patient to now drink one glass of water and after the expiration of ten minutes examine carefully for splashing sounds; if detected we certainly have a stomach myasthenic to an appreciable degree. The water should now be withdrawn as completely as possible, and the patient allowed a measured full dinner.

After the expiration of seven hours the tube is introduced, and if the stomach contains any amount of food (drink having been interdicted in the meantime) we have motor insufficiency, approximately in the proportion that the recovered quantity bears to the original meal.

The scanty high colored urine, of high specific gravity, lessened chlorides and acidity, or as sometimes happens even alkaline in reaction, is another point of diagnostic value. The diagnosis having been made, the quantity of urine passed can be used as a very good index as to the degree of myasthenia present. Boas concludes that the urine in retardation measures approximately 1500 to 1000 grm.; in stagnation, 1000 to 500 grm.; and in retention 500 grm. and less. By noting the quantity of urine daily, we can also make a fair estimate of the progress of the case under treatment.

With the results of these examinations, combined with the clinical history, well before us, we should experience very little trouble in arriving at a positive diagnosis.

In the milder forms of the disease, namely, retardation and stagnation, we have an organ functionating more or less after the natural manner, but under conditions that impose difficulties upon the organ, which it is not able to overcome, except in very few cases.

The chief difficulty being the weakness of the muscle, owing to which it is unable to dispose of the quantity of food furnished, within the time allotted for this process. Therapeutically then the first thing to do is to furnish a diet suitable in quantity and quality to the ability of the organ to dispose of it within the specified time, to the advantage of the body at large. Any more than this becomes at once, instead of an advantage, a detriment to the whole body, and the stomach in particular. I do not think it necessary to make a detailed diet list in any of these cases, except to interdict the dishes well known as difficult to digest, and to limit the amount of liquids, which are to be taken after, and not during the meals. The quantity of the meal should be only enough for the stomach to dispose of, and secure a period of rest before the next meal. In many of these milder cases, these means alone are sufficient to allow the muscle to recuperate and strengthen itself during the periods of rest it now regularly receives, and in a few weeks it is able to cope successfully with all reasonable demands made upon it.

In cases demanding something more, the next step should be efforts directed to developing the muscles of the abdomen, and in particular the musculature of the stomach. The means for effecting this are electricity applied by means of the intra-gastric electrode, as well as general applications to the body; galvanization, faradization, one or both as best meets the needs of the

case. Massage of the abdomen is another efficient means of developing these muscles, and when carried out conscientiously, seldom fails to give gratifying results. As a rule no medicinal treatment is required, but any complicating faults must, of course, be given attention and corrected by appropriate means. Our main object is to develop and strengthen the gastric muscle, and if we succeed in doing this, nothing more will be required.

In the severe cases with retention and fermentation, it is to be understood in the beginning, than any treatment to be of avail must be carried out conscientiously and continuously for quite a period of time. The first step is to stop the fermentation by frequent and thorough lavage. This is to be used as often as necessary to accomplish this purpose, some cases requiring it four hours after each meal for several days. We are to use for this purpose plenty of pure warm water, as well as water containing antiseptic and antifermentative medicaments. In my hands, the best service has been from a mixture of one half ounce each of sodium salicylate and bicarbonate in one gallon of water; this is used once or more as needed during the twenty-four hours, and is of sufficient strength to inhibit the proliferation of the yeast germ, which causes most of the fermentation. As soon as the fermentation is under control we must endeavor by every means to develop the stomach muscle to properly perform its duty. As much rest as possible, combined with judicious exercise are the essential factors to be observed in any plan of treatment. A small meal of solid food is allowed, and after the expiration of four hours the region of the stomach is to be well massaged from left to right, with the patient lying on the right side; at intervals the abdominal muscles are to be strongly contracted. This process is to be continued for fifteen minutes, after which the patient is allowed to recline on the right side for the same length of time. The stomach is now thoroughly washed out and allowed to rest until the next meal. A well-fitting flannel abdominal bandage gives a great deal of comfort to these patients, as well as support to the abdominal walls. The object is to allow a small meal to be digested in the stomach, and by manipulation at the proper time to assist the organ in the natural disposal of as much of it as possible, the remainder is removed by the tube, allowing the stomach to rest until the next meal. The frequency with which this process requires repeating depends upon the degree of involvement, and the benefit resulting from treatment. In many cases it is necessary to repeat the procedure after each meal, in others, and after a period of treatment, only one washing per day may be required to control the case, and this is by preference to be used just before retiring, which usually insures the patient and his stomach a good night's rest. If sufficient nourishment is not obtained in this manner, we will be compelled to resort to rectal feeding to supply the deficiency of solid food, as well as liquid, the amount of which allowed "per orem," is to be at all times very limited.

An exercise very efficient in developing the abdominal muscles and viscera, and having a very beneficial effect in these cases is carried out as follows: Remove all the clothing and lie at full length upon the floor, with the feet together and the arms crossed loosely over the lower part of the chest. With the hips held rigid, raise the head and shoulders as high as possible without permitting any move-

ment at the hips. This acts directly and powerfully upon the abdominal muscles, and in a very few weeks will entirely do away with a flaccid, flabby belly.

The faithful performance of this exercise night and morning, followed by cold sponging and brisk rubbing, is a very important point in the successful treatment of these cases. (Judging from the facial expression of some of my patient listeners, I surmise they are somewhat skeptical as to the exercises advocated. To them, both those who so proudly wear beneath their waist-band a rotund Falstaffian protuberance, and those less favored brothers of the Bill Nye type, let me request of you a personal trial, night and morning for only three days, and there will be no doubt of your conversion as to its efficiency.) As to the medicinal treatment (of these cases,) only one drug seems to be of any benefit, and that is strychnia which should be used in full doses. The numerous digestive mixtures, hydrochloric acid etc., etc., are not indicated in this trouble, and are not to be used, unless some complication directly calls for their administration, which will be rarely.

In severe cases rest in bed for two weeks, daily lavage of the stomach, and exclusive rectal feeding, combined with massage, exercise, and electricity may be required to start the case on the up grade. The alternate use of hot and cold water through the tube is an efficient means of arousing and stimulating the gastric muscle to contraction.

To those poor unfortunates, the elasticity of whose stomachs fails utterly to react to these various measures, or whose low ebb of vitality does not permit of their thorough application, a resort to surgical procedures offers the only means of relief. Several operations by plaiting the stomach have been devised, having for their object the reduction of its size without opening its cavity. These operations are more for the relief of the accompanying dilatation, than the motor insufficiency itself. In this country the consent to operate is seldom granted except as a last resort, when the patient is so reduced that the operation requiring the least time, is the one we are forced to adopt. This is usually gastro-jejunostomy or the opening of the lowest part of the stomach into the contiguous part of the small intestine.

THE AMBULATORY TREATMENT OF FRACTURES.*

BY FREDERICK RUSTIN, M. D., OMAHA, NEB.,
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In the ambulatory treatment of fractures it is, of course, understood that the discussion is limited to the lower extremities. This method has been in vogue, to a greater or less extent, for twenty years, but was not generally used by the hospitals of this country till 1890, when Stimson inaugurated his ambulatory method at the Hudson Street, or, formerly, Chambers Street Hospital, New York City. The treatment since then has been used in all the larger hospitals of this country, but its efficiency has been open to much discussion. With its initiation it was hoped that a method could be brought about which would give satisfactory results in all simple fractures below the hip-joint. Fractures of the thigh, through the knee, and those involving both bones of the leg near the joint have been

* Read before the Western Surgical and Gynecological Association, Minneapolis, Minn., December 27, 28, 1900.

treated ambulatorily, and in some cases with marked success. But the writer does not argue that ambulatory treatment is rational in these cases.

It is the object of this article to show that in selected cases, confined chiefly to fractures of the fibula, Pott's fracture, fractures of the malleoli and tarsal bones, the ambulatory treatment is not only rational but gives the patient the advantages which are claimed for the practice.

Scudder, in his admirable treatise on fractures, gives the history of the ambulatory treatment, so that a repetition here is unnecessary. By the ambulatory treatment of fractures, according to Scudder, is understood a method of treatment that permits of the immediate and continued use of the injured limb as a means of locomotion. This definition is misleading. Ambulatory treatment need not necessarily be immediate, but may be applied any time before the fragments are held in relatively firm position by the new growth which leads to the callus formation, so that a period of seven to fourteen days may elapse after the injury and yet the ambulatory treatment may be applied. The different methods of applying splints will be described, but they all have the same object, namely the weight of the body which comes upon the mechanical contrivance underneath the foot is transferred to the bones of the leg above the fracture, the seat of the fracture being immobilized. Dollinger's method from Scudder is as follows: The leg is first thoroughly cleansed, the fracture reduced, and the ankle fixed at a right angle to the leg. A flannel bandage is then applied from the toes to above the knee. This bandage includes beneath the sole of the foot a padding of several layers of cotton, making a pad from one-half to one inch thick. Over this is applied a plaster bandage from the base of the toes to above the knee, the sole being strengthened by several layers of plaster extending longitudinally along it. The bandage is applied especially firmly about the upper end of the tibia and here it is made somewhat thicker. Thus when the case is hardened the leg is suspended, and the patient, stepping upon the sole of the plaster cast, has the foot practically suspended in a plaster shoe, for the thickness of the cotton beneath the foot separates the sole of the foot so far from the sole of the cast that the weight of the body which naturally comes upon the foot is borne by the thickened plaster around the calf and upper part of the leg. This is made possible by the fact that the plaster fits tightly in its upper portion, and the natural stiffness of the plaster transfers the weight of the body from the sole of the plaster to the diverging portion of the leg. In the application of this plaster it is necessary to have a trained assistant who, standing at the foot of the table, supports the leg and exerts sufficient pressure to keep the fragments in position while the plaster is being applied.

Stimson's method, after the reduction of the fracture has been completed, consists in first covering the leg from the toes to the head of the tibia with cotton. This is secured by an ordinary bandage. A plaster bandage is next applied, extending from the toes to a point three or four inches above the fracture and of sufficient strength to thoroughly immobilize the fracture. This plaster is allowed to harden and is covered with a thin layer of cotton; several thicknesses of cotton are also placed under the sole of the plaster, the object of the cotton being to separate the im-

mobilizing plaster from the suspension plaster, which is now applied. This consists of a plaster bandage which extends from the toes to the tuberosity of the tibia and fits firmly the upper part of the leg, particularly around the head of the tibia and fibula. Incorporated in the sole of this suspension plaster is a piece of wood about three-eights of an inch thick, and as long and as wide as the foot. Strips of plaster are now placed, beginning at the outer side of the leg, extending downward over the malleolus across the plantar surface and up on the inner side of the leg to the head of the tibia. Another strip is placed posteriorly from the fleshy part of the calf downward over the heel to a level with the toes. These are allowed to harden and then are retained in position by several circular turns of the plaster of Paris bandage. This method has been used extensively and has met with good results in many cases. The splint, however, like its predecessor, is cumbersome, requires some time for application and is difficult to apply. In 1898 Dr. Finley R. Cook devised an ambulatory splint which is easy of application, is quickly applied, and holds the fragments in firm position while the leg is in use. His splint consists of two steel uprights connected at the bottom by an iron bar and having at the upper extremity of each upright a flange-like projection which is intended to conform to the calf of the leg. Cook's method is to immobilize the fracture after the reduction by a light plaster splint. This plaster extends from the toes to about the middle of the leg. This is covered by a thin layer of cotton which separates the primary plaster from the subsequent plaster and iron splint which are next applied. The object of the cotton is the same here as in Stimson's method, namely, to prevent friction between the plaster which immobilizes the fracture and the plaster which bears the weight of the body. Several turns of the plaster are taken around the calf of the leg, working downwards, and in this plaster is incorporated the above described splint of Cook's. In this case the second plaster extends only to the level of the ankle, and care should be taken that the iron uprights run in a direction parallel to and in the same line as the axis of the leg. It will thus be seen that the fracture is immobilized and that the weight of the body is borne on the cross bar of the splint and is transmitted directly by the uprights to the upper extremity of the leg. This method has the advantage over the previous ones, in its quickness of application, in its stability, in the fact that the immobilizing plaster is in view and the foot is in neither direct nor indirect contact with the floor.

The advantages of the ambulatory treatment are, first, the time which the patient saves, in some cases the period of incarceration being but a few days. Second, the swelling and edema are less owing to muscular action, and there is less apt to be stiffness of the neighboring joints, less muscular atrophy, and union is apt to be hastened owing to the fact that immobilization is not perfect and irritation of the fragments stimulates a more hasty reparation. It might be added, also, that in old people the dangers of hypostatic pneumonia are nearly eliminated. The disadvantages are, first, the callus formation is much enlarged owing to imperfect immobilization; second, embolic processes, either of fat or blood, are relatively encouraged; third, immobilization is insecure owing to muscular action; and, finally, non-union is not uncommon,

particularly in people of advanced years.

Statistics are practically of no value in comparing this method to ordinary treatment which confines the patient to his bed. This is true, perhaps, because in the earlier style of treatment plaster bandages were not applied as early as they are to-day. Statistics, therefore, giving the hospital incarcerations of patients suffering from fractures show a longer period twenty years ago than they do to-day, excluding the cases that are treated ambulatorily. It may be of interest, however, to compare certain unselected cases of fractures, some of which have been treated by the ambulatory method with similar fractures in the ordinary method. In Bellevue Hospital twenty-five cases of Pott's fracture averaged twelve and one-quarter days' detention. These were treated practically by Stimson's method. Comparing this with twenty five cases of the same fracture in the same hospital by the ordinary method, the period of incarceration is twenty-nine and one-third days. In the Presbyterian Hospital, New York, fourteen fractures of the fibula which the writer himself treated by the ambulatory method were discharged without crutches, the average hospital detention being three and a quarter days. The same series of cases which the writer treated in the ordinary method were detained on an average of fourteen and a half days. In the same hospital nine cases of Pott's fracture in which Cook's splint was applied left on an average of eight days. Nine unselected cases of simple Pott's fracture treated by the ordinary method were detained twenty four and one-half days. In Roosevelt Hospital, fifteen cases of fracture of both bones of the leg within three inches of the ankle joint treated by the ambulatory method were in the hospital averaging eleven days. The same kind of fractures treated by other methods were incarcerated thirty-four days.

It has been possible for me to follow out in a number of cases the subsequent history of some of these fractures above cited, and the results have been as satisfactory by the ambulatory method as by any other. No plea is here made for the advocacy of this treatment in all fractures, but there are certain cases where a trial may be made and in justice to the patient we should give him a chance. Under careful observation it is possible to know if the splint is painful, if locomotion causes pain, if the fragments are not held in good apposition, and a change may be instituted at any time, so that we may in many cases attempt the ambulatory treatment and if successful carry it out to the end, but if not successful we can fall back on the more rational treatment before harm is done.

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Editorial.

INDICATIONS FOR OPERATION IN CANCER OF THE STOMACH.

Dr. Victor Panchet in *Le Nord. Medicale*, 15 Jain, 1901, says: Surgical intervention has been recommended in all suffering from gastric cancer, or suspected of it.

Operation is benign according to the early date of intervention. The physician then should strive for an early and definite diagnosis. As an aid to this end, then, there are several quite definite symptoms, as the yellow pallor, the black ejesta and tumor in the epigastrium. Our clinical examination should be scrupulously exact.

CLINICAL EXAMINATION OF A PERSON SUSPECTED OF GASTRIC CANCER.

We proceed, if possible, to examine the patient at the different seances; the first before, and the second after insufflation of the stomach. The following day we proceed to examine the aliment by gastric catheterizing. These are followed by a chemical examination in the laboratory of the blood and the gastric contents

FUNCTIONAL TROUBLES.

We must diligently enquire into the patient's functional disturbances as to vomiting, pain, epigastric weight, diarrhœa, constipation or malœna. Has the patient lost flesh, with progressive denitrition and loss of force?

GASTRIC EXPLORATION.

Let us recall that the stomach is divided into two segments; one, the greater tuberosity, vertical in position, the other, the lesser tuberosity, occupying the epigastric region and horizontal position; the former is filled with gas and is sonorous on percussion: the latter is papable, it is the site for accumulation of the aliment; it is also by all odds the most common seat of lesions.

INSPECTION.

We may sometimes witness excursions in the distended state; we may observe the peristaltic movements of the organ, when a pyloric obstruction exists. Their contractions visibly augment by surface palpation.

In order to judge with certainty of the form and situation of the stomach, we must insufflate. This may be practiced by the immediate injection of air by Fanscher's tube, or by the ingestion of effervescent salts. Seidlitz powder is commonly employed, and about two glasses of liquids swallowed.

PALPATION.

Palpation permits us to only examine the lesser tuberosity or horizontal portions, as the first part is quite away from us, up under the ribs and sturnum.

We must conduct this with great gentleness, as roughness will provoke spasm. By this valuable resource we will determine the mobility of the

tumor, its degree of sensibility, its volume and consistence.

Clappotage, or gurgling, continues for about two hours after a meal. It marks the site of the lesser curvature, not lower than the ninth rib.

PERCUSSION.

In order that gastric sonority is not confounded with that ——— from the colon, we must not employ it until after inflating. Percussion may be reinforced by consentation phenodoscopy.

The gastric tube has an attachment to connect with the ear, when the cardia or lesser chamber is successively percussed with the finger tip.

Trans-illumination is of doubtful value.

NOTE.—In recent years remarkable advances have been made in the surgical treatment of gastric lesions; notably, in gastric ulcer, in stenotic obstruction of the pyloric end; in œsophageal stricture, in hour-glass contraction, in gastroptosis, dislocation and adhesions

Diagnosis has been greatly elucidated by recent scientific discoveries; nevertheless, it yet remains exceedingly obscure in numerous cases.

The position of the stomach is variable, and as correctly pointed out by Panchet the greater tuberosity in the normal state is quite out of the way of manual exploration.

Fortunately, in the greater number of instances of benign or malignant changes, the site effected is the horizontal pole, a part most readily accessible in the event of operative treatment.

Insufflation by means of effervescing salts will enable us to readily determine the form and position of the stomach, but in cases of ulceration, or other degenerative changes in the gastric walls, it involves danger of perforation. In one case in my own hands the rapid over-distention provoked great distress; spasms of the pylorus was produced, and relief only came by catheterizing the stroesophagus.

On general principles we must now surgically treat all those lesions of the stomach which resist internal predication; those which lead to inanition by stricture, those which paralyze the function of the organ, or are a source of distress.

The acme of gastric surgery will be attained when a cancerous or functionless stomach may be safely resected and the continuity of the alimentary canal restored.

A notable gain has been achieved in gastrotomy by the immediate jointing of the cardia with third piece of the duodenum. T. H. M.

A NOTE ON TUBERCULAR HERNIA.

DR FRED JUSTINIAN IN DEUTSCHE ZEITSCHRIFT FUR CHIRURGIE, JUNI, 1901.

The first extended notice of this rare complication comes from the French, that of Lejars, who collected records of six cases and recorded one of his own. In 1895 Tenderich, in the *Deutsch Zeit fur Chir.*, published three new cases. By 1896 twenty-two cases of hernial tuberculosis were published. But the first to correctly diagnosticate the condition, describe three varieties of it, with their pathological anatomy, was Bruns, who created the term, "Tuberculosis Herniosa." In the *Heidelburg Klinic*, 1896, appeared the publication of Karl Roth, in which nineteen cases were collected, besides from his own service. In 1897 there appeared in *St. Petersburgh Medicine Work* report of two cases by Bruckel, one by Sternburg; one in 1898 by

Broca; in Durante's *Festschrift* fifteen cases were in childhood.

In the greater number a clean dissection was made and the Bassini operation performed.

Tuberculosis of the hernial sac is most frequently a secondary process: at first latent, although there are instances in which it appears as a primary lesion, direct infection coming through the blood stream. Jonesco, who believes in its primary origin, describes at length the histological elements involved, says that we may have a genuine "peritonitis herniosa simplex."

In twenty-eight cases in which the pathological complications were noted, in fifteen other organs were involved by the tubercular process, consecutive to those observed in the hernia.

Others have noted that the hernial infection is in evidence most frequently after ascites, or intestinal complication in fully two-thirds of the cases.

There are but five cases recorded in females, all crural hernia.

There are three forms of hernia tuberculosis. In the first there is a miliary infection, with small nodules in the serosa and mesentery.

In the second form, by a fusion of the smaller nodules, masses larger than cherries are lodged in the walls of the sac.

On dissection we find the omentum thick, infiltrated and roughened, with adhesions extending in various directions.

A third form is described by Hayem wherein there is inflammation of the sac, which extends through the mediastinum and other adjacent parts.

A considerable number of these cases are only exactly recognized on the autopsy table. There are three by Cruveilhier, and one each by Hayem and Guyon.

In the twenty-eight recently recorded cases, twenty-three were operated, but there were only three in which definite diagnosis was made; one by Bruns, who aspirated a cold abscess and removed tubercular pus from the sac; the second by Bellphage, who detected a tumor as large as a hen's egg under a thick, hard envelope; the third by Helfrich in a boy of seven years, who had tubercular ascites, the fluid escaping through the processus vaginalis into the sac and scrotum.

The prognosis is good in the cases when the disease is primary and we can completely exsect the local infection.

In the twenty-three operated, sound union followed, with no consecutive outbreaks.

In the miliary form, the outlook is not promising. In all cases complete extirpation of the sac is called for, with free drainage and such hygienic, alimentary and medicinal treatment as is called for in tuberculosis elsewhere.

NOTE —Dr. Justinian has called our attention to one of the lesions occasionally found in ruptures. We have found sarcoma of the mesentery a necrotic appendix, a cystic ovary, a calculus in an extended bladder, and purulent formation in the walls of an old sac. A chronic hernial formation, becauseof its isolated position, quite outside the body, preserves a feeble nutrition, and hence is prone to degenerative changes; moreover, it is exposed to trauma, and hence, in the event of impaired vitality, we may look for the invasion of tuberculosis, which is much more common than the author states.

There are but few surgeons who do

not at some of their operations for radical cure encounter it. Early and radical extirpation is the only rational remedy, which at once suppresses the pathological process and cures the hernia. T. H. M.

DANGER TO LAITY.

DOCTORS REPUDIATE PROFESSOR ATWATER'S THEORY OF FOOD VALUE FOR ALCOHOL.

Testimony that the Text-Books are Accurate.

The American Medical Association has just held its annual meeting in St. Paul, Minn. During its sessions, the American Medical Temperance Association composed of eminent physicians and teachers in medical colleges, members of the American Medical Association, always holds one or more meetings for the special purpose of promoting scientific study and investigation into the action of alcohol in health and disease. The meeting this year shows a great advance in the scientific study of alcohol and its action on the body. In the ten years of its existence, its membership has grown to over two hundred, and the number of papers and discussions all of an scientific and technical character are increasing, so that literally this is the most authoritative organization studying the alcoholic question in this country. Of the ten papers read at the St. Paul meeting, three of them discussed Professor Atwater's experiments and conclusions, then passed the following resolutions as the unanimous opinion of the Association:

"Whereas, the American Medical Temperance Association, the members of which are physicians and medical teachers who have devoted years to the study of alcohol and its effects, and who are conversant with the work done by scientific men the world over to determine the effects of alcohol when given in any quantity, have noted the teaching of Professor W. O. Atwater, of Wesleyan University, upon the food and medical value of alcohol as set forth by him in the pages of the influential lay press, be it

"Resolved, That this Association utterly repudiates the pro-alcoholic doctrine of the said Professor W. O. Atwater as being contrary to the evidence deduced by scientific experimentation, and that his conclusions are unwarranted by the evidence resulting from his own experiments. Be it further

"Resolved, That this Association regards the teaching of Professor W. O. Atwater as erroneous, and a source of danger to the laity inasmuch as such teaching contributes towards the increased consumption of alcoholic beverages by giving supposed reason for their safe use."

(Signed)

N. S. DAVIS, M. D., President, Chicago, Ill.

T. D. CROTHERS, M. D., Secretary, Hartford, Conn.

Two other papers pointed out the evils from the use of cigarettes and tobacco on neurotics and young persons. One paper critically reviewed the school book teachings of alcohol, sustaining their claim to scientific accuracy in nearly all the books used.

The address of both the President and vice-President described the folly of efforts to check disease and degeneracy by ignoring alcohol as one of the active causes, also the conflict of experience with theory and tradition. The other papers read discussed the causes of the popularity of alcohol as

a beverage, and its danger in high altitudes; also the substitutes for its use in medicine.

The value and reliability of these papers is evident from the fact that eight of the ten authors are active or emeritus professors in medical colleges. Four of them are medical journalists, two of whom are in active practice.

BOOK REVIEW

JOHN L. STODDARD'S LECTURES.

Illustrated, complete in ten volumes. Vol. IV. Balch Bros. Co., Boston, publishers, 1899. Price, $22 to $36 per set.

The sixth volume of this series is devoted to a study of Berlin, Vienna, St. Petersburg and Moscow.

In Germany the plates are of the public buildings, art museum and public characters, crowned heads and statesmen. Some of the gardens are described, as well as many scenes from paintings of Bismark.

Among the notable plates of Vienna are pictures of the native church, the city hall, the university, the palace of justice, many of the parks and public gardens and statues, the museum, St. Stephen's Cathedral, and views of the beautiful Danube.

The descriptions of St. Petersburg and Moscow are very vivid, and one feels as though he were actually traveling through these Russian provinces. Much space is given to a description of the Tsar and his surroundings, with plates of the imperial palaces, and much interesting reading.

SYSTEM OF PHYSIOLOGIC THERAPEUTICS.

A Practical Exposition of the Methods other than Drug-giving Useful in the Treatment of Diseases. Edited by Dr. S Solis Cohen. Eleven Volumes, Cloth. Published by P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia, Pa.

This system includes Electro-therapeutics, Hydrotherapy, Pneumatherapy, Thermotherapy, Phototherapy, Mechanotherapy, Psychotherapy, Serotherapy, Organotherapy, Dietotherapy, Phlebotomy, Prophylaxis, Balneology, Climatology and Inhalation Methods.

The two volumes before us, being the first of the series, are upon Electro therapeutics, and were written by George W. Jacoby, M D., of N. Y. The first volume, which is well illustrated, is devoted to Electro-Physics and the apparatus required for the diagnostic and therapeutic application of electricity.

The author also fully discusses the subject of the utility of electric light currents for therapeutic use, shows the danger from their use and how to arrange and connect the apparatus so as to render their application safe and effective. This is a very important part of the work.

The second volume treats of Electro-Diagnosis, Electro Prognosis, Electro-Physiology, Electro Pathology, Electro-Surgery and Electro-Therapeutics, with special chapters or sections upon Electro-Gynecology, the use of electricity in Diseases of the Eye, Ear, Nose and Throat as well as in Skin Diseases, written by eminent specialists in those lines. The use of the X Ray also receives appropriate attention. The work is to be commended for its comprehensive brevity, being adapted to the wants of the beginner as well as the specialist. It is issued in the clear type and excellent make up characteristic of the Blakiston publications. W. H. W.

OPHTHALMOLOGY

In charge of J. A. TENNEY, M.D., Boston.

Dr. C. F. Clark read a paper at the last meeting of the Am. Med. Association, in which he predicted that in a few years ophthalmic surgeons, instead of depending mainly upon tenotomies in the treatment of strabismus as they have heretofore done, will adopt the more tedious but more conservative operation of advancement or resection. The operative effect should be so distributed among the ocular muscles as to preserve the control of the eyes in all ordinary movements. He believes that advancement or resection combined with a very limited tenotomy should be performed, as a rule, instead of a simple tenotomy.

Dr. A. E. Davis read a paper at the same meeting in which he asserts his belief that the amblyopia that goes with squint is acquired, being caused by the suppression of the image in the squinting eye. He holds that the nonoperative treatment will cure thirty per cent. of the cases. When it fails, operations should be undertaken. He recommends Panas' method of operating, as being safe, quick and efficient.

Dr. A. A. Hubbel at the same meeting reported a case of retroflexion of the iris. A laborer, age 56, struck the side of his head against a pavement, producing ecchymosis of the left eyelid and deep congestion of the episcleral tissues, but no pain. The cornea was slightly hazy, and the tension was somewhat diminished, although there was no laceration. The blood became absorbed after treatment, when examination failed to find any trace of the iris, ciliary processes or crystalline lens. He believes the iris was reflected upon the ciliary body, and that the lens was absorbed.

Dr. Preimdlsberger, (*Wiener Klin. Woch.*) reports three cases of cataract following lightning stroke. In two cases cataract in both eyes within two days. One was a boy of 13 years, the other 11. One was unconscious for a short time only, the other for two days. Linear extraction was successfully performed in both cases. The third case was a man of 24, who had been struck by lightning six years before, when he was unconscious for ten minutes only. A cataract developed in the right eye some months later, which was successfully removed with iridectomy.

A. Breuer, (*Lancet*) treats astigmatism with the cautery, advising this treatment chiefly in cases of compound hypermetropic astigmatism of high degree. If cauterization extends through one half the thickness of the cornea, the effect is permanent. He uses the ordinary fine platinum loop, taking the alternating current from the electric main by a transformer and a rheostat. He employs red heat, and produces a small punctate burn in the corneal limbus, or in the cornea itself, penetrating one half its thickness.

Dr. H. N. Rafferty,(*Jour. A. M.A.*) reports a case of acute glaucoma occurring in a cataractous eye, 53 days after extraction of cataract from the other eye, the patient being 80 years old. The cataract was removed without pressure upon the eyeball,and without capsulotomy. The glaucoma was treated by a broad iridectomy, which completely relieved the pain.

G. Herbert Burnham, (*Lancet*) describes two cases of serious eye disease that were relieved by the persistent use of potassium iodide and

mercury, with pilocarpin hypodermically. The first was a case of sclerokeratitis, which cleared up almost completely in four months. The other case was one of sympathetic ophthalmia, in which the treatment was continued for eight months, with a good prospect that the normal condition of the eye would be restored.

Dr. C. A. Veasey, (*Med. News*) writes the details of a case of acute glaucoma of nine days' duration, where the vision was reduced to perception of light, and useful vision was restored by an upward iridectomy. There was a history of a similar attack in the other eye six years before, resulting in complete loss of vision. After the iridectomy the vision was greatly improved, but secondary glaucoma set in, making it necessary to remove its cause, which was the swollen crystalline lens. In a month the patient's vision was 5-40. The interesting point in the case was the success of the operation when the eye was in such a disturbed state.

CLINICAL SURGERY AND SURGICAL PATHOLOGY.

In Charge of T. H. MANLEY, M. D., New York.

THE LIMITATIONS OF SURGERY IN THE TREATMENT OF NERVOUS AND MENTAL DISEASES.

BY WILLIAM BROADDUS PRITCHARD, M. D., NEW YORK CITY.

Adjunct Professor Nervous and Mental Diseases New York Polyclinic.

Read before the Richmond Co. (N. Y) Medical Society May 15, 1901. Read before the N. C. State Medical Society 48th Annual Meeting, Durham, N. C., May 23, 1901.

Among organic nervous diseases, cerebral and spinal tumor, abscess, phlebitis, malformations, congenital and acquired, and all the sequences of trauma, are claimed by the surgeon with an assurance which resents with indignation any protest or criticism, and which we relinguish, not so much because we confidently expect more, but for the entirely negative reason, that we can, with assurance, promise less. Personally I believe that, at least theoretically, we must look to surgery for all that is to be attained in curative results in the diseases mentioned. Much remains to be done, however, in the way of prompt and accurate diagnosis and perfection of technique before even in this field surgery proves less disappointing than other measures. I have seen and reported one case of brain tumor practically cured, two greatly and for many months relieved, two cases of sinus plebitis cured, three of cerebral abscess cured and several sequences of trauma cured or favorably modified through surgical interference, which cases otherwise would probably have ended fatally. In certain forms of peripheral neuritis, those due to mechanical causes, surgery is obviously and alone the means to the end of cure. In certain conditions of post paralytic helplessness from contraction, as in the various talipes of poliomyelitis, the spastic deformities of hemiplegia and paraplegia, muscle transplantation or other plastic procedures often greatly benefit through restoration of useful function. Many of these cases are greatly benefited by the mechanical devices of the orthopædist. I have seen a helpless, bed-ridden paraplegic enabled to walk about at will, and earn a living, by the aid of an ingeniously constructed orthopædic apparatus. All this we concede to our brothers with the knife, and still he is not satisfied, but with rapacious and omnivorous maw, like Oliver Twist, he asks for more.—*New England Medical Monthly.*

MIXED TUMORS OF THE TESTICLE.

BY DR. ADOLPH GESSNER.

A rigid division of the tumors of the testis is seldom seen because it is attended with great difficulty. Tumors of the connective-tissue type and those composed of foreign elements are the most common. Kocher has emphasized the difficulty of differentiating malignant growths here from teratoma.

The teratoma of the testis is encountered oftenest after middle life.

Astley Cooper first described this type of tumor as a "cyst of the testicle;" others have regarded it as an adenscystoma-mucosum or utheromatosum, cystoma, fibro-cystoma, chondrocystoma, etc., they contain teratomatous elements, we have a metaplesia, a heterotopia with retrogressive changes in the elements of the testis. Cooper and Curling regarded them as an enlargement of the semeniferous ducts. Vischow found that their composite elements, corresponded with those of the testis; besides they contained hair, bone, fat, muscle, cartilage, etc.

Kilporth regarded this growth as a reversion process. Their elements correspond quite completely with dermoid-cysts of the ovary. Lang found in one of these tumors, in a child, of one and one-half years, bone, hair, mucous-membrane, cutis, nerve cells, etc. Wilins divides these tumors into two classes, viz: teratoma and mixed. 1st, the entryoma, cystic tumor, which contains a bud, or nucleus from the fore-trunk of the embryo, and 2d, by an embryoid-tumor, mixed with primitive elements of the fœtus.

In many instances they tend to malignant changes. In eight cases treated in Friedrichshain Kranken Haus, four were sarcomatous, one large cell, alveolar, one fibro-sarcoma, four teratoid and embryoma.

It appears, that teratoma of the testis is uncommon at birth, as Kocher in thirty-four reported cases, found but two congenital.

They usually appear late in life, though a few have been reported in early age. In advanced cases metastasis or recurrence is not uncommon.

NOTE: The foregoing abstract embraces a very important group of neoplasmatic. The author enters at length into their etiology, their embryonic elements and their clinical history. It is remarkable, however, that he makes no mention of their very frequent association with hernia in old men. My experience has been that they are more frequent with the German than the Latin or British races. Two typical cases have come under my care; one five years ago, and one three years. Both were over sixty; Germans, rugged, vigorous men, but incapacitated; one fell into the hands of a quack, and was in a bad way before he came to me. His was a case of the mixed character, an alveola-sarcoma with teratoid elements. The other man was of slight build with a scrotul tumor suspended from his shoulders by a bag and stout straps, the mass weighing 27 lbs. and extending below the knees. This contained practically all the tissue elements of the body—a genuine teratoma. Both had inguinal hernia, which was treated at the time the tumors were removed. The results were excellent; their health was fully restored and there has been no recurrence.

The histological elements and the etiology of these were quite identical with the female dermoid. They are

embryonic and have their origin in the meso-derm, but in the male they come late in life. T. H. M.

ON THE TECHNIQUE AND CURE OF THROMBO-PHLEBITIS OF THE LATERAL SINUS.

BY E. VIDAL.

Among the great number of works published on the complications following middle ear diseases, the surgical treatment of thrombo phlebitis of the lateral sinus of the aura-mater, yet remains very incomplete Observations it is true, are numerous, but they are mostly gathered from autopsies.

Among the many memoirs recently published on middle-ear suppuratives may be mentioned in France, those of Broeco, Manbas, Lubet, Barton, Mignot, Chipault, Lanciel and Robinsau; among foreigners, Hecker, Birches, Knapp, Lane, Milligan, MacEwen, Lane, Ballance and others.

The diagnosis of sinus lesion is not always easy.

Immediate drainage by the mastoid route was first employed, then later the jugular vein was ligated.

In my own cases there were two veritable resurrections from impending death.

In these cases the two lateral sinuses were completely exposed.

This operation embraces:

1st. That the lateral sinus be isolated as completely as possible from all its vascular connections, the intracranial and peripheral.

2d. This cavity must be well cleared throughout its entire extent of all septic material.

3d. It is indespensable, the mastoid empyema, that it must be widely opened and disinfected, the curve of the sinus and the jugular gulf.

If the programme is simple, the operative act is both complex and minute.

MODE OF OPERATING. LIGATURE AND DRAINAGE OF THE JUGULAR.

We begin by making such an incision as will expose the internal jugular deep in the neck. If the operation is late, we may find the vessels thrombosed so far down that it may be impossible to pass the ligatures below part plugged by coagulum.

We must not overlook that here the difficulties are altogether greater than in a condition of health. The tissues are infiltrated, the ganglia is enormously distended and suppurating, the vein itself is transformed. It has lost its blue color, is transformed into a fatty substance and may with difficulty be distinguished from surrounding tissues. Finally the vein exposed is protected with care. It is divided between two clamps, the cardiac and ligated. The forceps is removed from the proximal end, the vein cleared of pus and disintegrated thrombus. The parts are well irrigated, the vessel tamponed and wound in neck partly closed.

THE SECOND STEP. EXPOSURE OF THEROPHIBUS-PRESS AND SUTURE OF THE LATERAL SINUS; FIXATION TO THE SKIN OF THE THROMBOSED SEGMENT.

A large quadrangular incision is now made through the scalp and cranial plates in such a manner as to freely expose the occipital confluence of the sinus. The trap-door flap of bone is removed by the aid of the mallet and chisel, the scalp and skull plate, so preserving their connections that they may be replaced.

The sinus is now isolated and ligated three centimeters from the Torcular. On distal side of the ligature,

the sinus is divided and the free end fixed to the cutaneous incision as in the neck. Now, the vessel is cleared of septic elements, pus, clots, etc., and well irrigated. Now the bone flap is restored, the gap in it, for sinus drainage remaining.

THIRD STEP. CLEARING AWAY OF THE MASTOID APOPHYSIS.

The penetration of the mastoid apophysis and exposure of the cavernous sinus is not difficult, but the complete evacuation of its impacted purulent material requires experience, practice and tact in order to make it effective. This accomplished, the free irrigation of the sinus from the confluence to through is complete and thorough.

The mastoid wound is treated in the same manner as the two former.

In *bilateral occlusion* by thrombo-phlebitis, the simultaneous ligature of both vessels, are said to be attended with immediate danger to life. Experimental ligation certainly does lead to death, when both sinuses are suddenly closed by a ligation in the healthy state; but here we are out of the domain of speculation; the circulation has been slowly but completely restored, arrested by a pathological process, and we have no evidence of cerebral disturbance. Circulatory equilibrium has been re-established, the vessels are hopelessly destroyed, the biligation of the sinuses in no manner disturbs a circulation which does not exist; hence here *intervention is possible, legitimate and necessary.*

These operations without doubt are long, and involve an extended mutilation, and this is the great objection to them. My second operation lasted over one hour, on a little inert patient in extreme toxæmia. Both these are extreme cases, which are saved only by drastic measures. (*Arch. Prov. De Chirurg., Tome X, No. 5, Mai, 1901*).

NOTE—The author here opens up a new line of "vascular exclusion" on the same general principle observed in intestinal surgery. Here again we observe clinical phenomena quite at variance with physiological teaching, for it seems quite incomprehensible how the whole mass of venous blood can escape from the brain while both cavernous sinuses are completely occluded.

The internal jugulars in man are very large, because of the comparative volume of the human brain; while in the dog and other lower animals they are much smaller than the external jugulars. Notwithstanding Vidal's optimism in the premises, the complete simultaneous ligatation and exclusion of the jugulars, we must regard it as quite an unwarrantable procedure. True, the individual may survive the procedure, but this is of little consequence if the vigor and full integrity of the intellectual powers are to remain throughout life impaired or destroyed.

Moreover, we believe that the author greatly overrates and magnifies the dangers of septic thrombosis. The vessel at the part involved is temporarily transformed into a pyogenic membrane; septic bacteria are caught up in the meshes of the coagulum, and are there held until their vitality and power for mischief ends, when transformation changes, rendering them innocuous, begin; the purulent infarcts are reduced to granular, amorphous elements are gradually moved on with the circulation, and carried to the lungs for their final oxidation and destruction, a pervious canal succeeding. Hence, from the excellent results we have witnessed from the

free opening mastoid process, the denuding and clearing out of a wide area of the cavernous sinus, we are not prepared to endorse M. Vidal's radical operation. T. H. M.

MEDICINE.

In Charge of Dr. A. D. Davidow, Troy, N. Y.

THE CAUSES OF FAILURE OF COMPENSATION IN DISEASES OF THE HEART.

M. Manges, * New York, with reference to the pathological conditions which must be considered in the study of this question, states that hearts which have been attacked by actual organic valvular diseases, from any cause, no longer have a normal myocardium, since the latter has been involved in its parenchyma or interstitial tissue, or both, in various foci. Any defect in the valvular apparatus is compensated for a longer or shorter interval by hypertrophy, which in turn is followed by changes in the parenchyma muscle cells or interstitial connective tissue, or both, or in the ganglionic cells or nerve fibres, or both, which may finally result in such weakening of the heart walls that the heart is no longer able to propel the blood in normal amounts, as needed by the system at large. The causes of this break-down may be either the distention of the cavities, which results from leakage of the valves, or it may be due to defective nutrition of the myocardium from arteriosclerosis, anemia, chronic or acute intoxications, mechanical overstrain, or other causes. If the nutrition of the heart is properly maintained, if the work which the heart must perform is properly regulated in amount and time, then these myocardial changes will in no way exert any deleterious action upon the individual, but may even be conservative to the heart as such, until the appearance of the arteriosclerotic changes, to which all hearts and all parts of the body must sooner or latter succumb, since it must be distinctly understood that the reserve power of the hypertrophied heart is just as great as that of the normal organ; but if the causes of the hypertrophy are still active, then the constant call on its reserve energy will result in the diminution of the amount at its disposal. With proper care for the nutrition of the body at large and the work of the heart, the development of arteriosclerosis of the coronaries and chronic myocarditis may be controlled for a long time. From the clinical side, the most important causes of the failure of compensation are grouped as follows: 1. Failure of general nutrition of the body. 2. Disturbance of local nutrition of the heart. 3. Increased work of the heart. 4. Functional cardiac disorder. 5. Effects of improper treatment. Each of these causes is considered somewhat in detail.

*N. Y. Med. Rec., Feb. 16, 1901.

THE SPECIFIC TREATMENT OF ACUTE DYSENTERY*

W. J. Cruikshank, Brooklyn, concludes his discussion of this question, which he summarizes as follows: 1. Dysentery is a disease of great gravity. 2. It is both contagious and infectious. 3. It is caused by the introduction into the system through food and drink, also through the air, of a specific micro-organism, the identity of which seems to be still in doubt. 4. Dysentery is one disease, in whatever latitude it may be found, and the only varieties which have any foundation in fact are those which may be

*N. Y. Med. Jour., Mar. 16, 1901.

based on the intensity of the morbid process. 5. The majority of the therapeutic agents which have been suggested for the treatment of acute dysentery are useless, and in many cases harmful. 6. Sulphate of magnesium, properly administered, in the acute form of this disease, acts as a specific. The method of its administration is given in detail. In all cases of acute dysentery, from the beginning of the attack until there is a subsidence of all the symptoms, sulphate of magnesium should be administered in dram doses every three hours, dissolved in one or two ounces of distilled water, to which may be added ten drops of dilute sulphuric or aromatic sulphuric acid. The beneficial effects are shown in a very few hours after the commencement of its use. Tympanites, if present, is rapidly reduced, the stools become less painful and less frequent, the blood and mucus disappear. The treatment must be continued until the stools become nearly normal. When this result is obtained the medicine is gradually withdrawn. The average time required for the establishment of convalescence is from three to six days from the commencement of the attack. The disease occurring in children should be treated in the same manner, the dose of the sulphate of magnesium and sulphuric acid being governed by the age of the child.

COLLECTION AND MOUNTING OF URINARY DEPOSITS.

Dr. F. L. James gives in the National Druggist an account of processes for collecting, preserving, staining and mounting tube casts, etc., from urine; slides prepared by them upwards of sixteen years ago are still clear and bright. "If the urine was to come from any considerable distance," he says, "the sender was directed to put a small crystal of naphthalin in the container. This substance, while not soluble to any observable extent in urine, has, nevertheless, the property of preserving it from decomposition for several days. As soon as the sample was received, it was poured into a conical glass, and put in a cold and quiet place (a refrigerator, for instance) to settle. As soon as the upper two-thirds of the volume of liquid became clear, that portion was drawn off with a siphon or pipette down to as near the line of turbidity as possible, without removing or disturbing any of the solid elements. A few drops of a 2 per cent. solution of osmic acid are then added, and shortly afterwards enough of a solution of eosin to make the whole strongly red. The glass is now exposed to a strong light, and the liquid rapidly darkens, becoming by direct light almost as black as ink, but when viewed by transmitted light, of a dark port wine color. It is then let stand until all the sediment is gathered at the point of the cone, when the supernatant fluid is drawn off, and the glass refilled with distilled water. After settling, the liquid is again drawn off, and another charge of distilled water added to the sediment. This is repeated until the added water no longer shows a trace of color, when, after the subsidence of the solid matter, it is drawn off, to the last drop, strips of bibulous paper being used to absorb the minute residue. The best for this purpose is a linen blotting paper, which has been submitted to a certain amount of pressure, and showing diagonal lines of an eighth of an inch, the effect of which is the prevention of separation of the fibres, and their

mixture with the sedimentary deposit. To the moist sediment, a few drops of glycerin (or if the operator is not expert in making glycerin mounts, of warm glycerin jelly) are added, the sediment stirred in, and the vessel rotated until the sediment is evenly distributed throughout the mass. It is now ready for mounting, and may be treated exactly as any other glycerin or glycerin jelly mount, the only precaution necessary being, as we have frequently stated in discussing the permanence of glycerin mounts, the use of prepared slips, the cell-walls of which are old and thoroughly dry. The writer prefers for this work a cement made of zinc oxide in a solution of dammar in chemically pure (the so called 'crystallizable') benzol, to which, to avoid brittleness, about 1 per cent. of old gilders' size, and a much smaller quantity of castor oil has been added. Such cells reach, very nearly, their limit of shrinkage from desiccation in from eight to ten months, but it is better to give them a year of seasoning. A carefully made glycerin mount, in cells of this age, is as nearly 'permanent' as any mount that can be made."

REMARKS ON ENTEROPTOSIS.

M. Einhorn, New York, includes under the term enteroptosis a descent of several organs of the abdominal cavity, that is, a general tendency of the abdominal organs to prolapse. The corset seems to be an important factor in the causation of these anomalies, but the condition is found in young women who have never worn a corset and in men. A constitutional weakness has been assumed by several writers, and a weakened condition of the abdominal walls appears to be a primary and most important factor. Although in many instances the weakness of the walls takes its origin in a congenital disposition tothis anomaly, there is no doubt that cases are met with in which a congenital factor does not come into play. To the latter category belong those instances of enteroptosis which develop after rather sudden great losses of flesh, no matter what their cause, and also after abrupt changes in the volume of the abdominal cavity. The condition is by far more frequent among women, 70 among men and 277 among women in one series of cases. The patient often complains of a faint feeling or certain weakness after rising. There is considerable fatigue after slight exertion. A feeling of weight is often experienced in the lower half of the abdominal cavity, with a dragging sensation in the epigastric region. Flatulence, constipation and frequent micturition are very frequent symptoms. These patients are, as a rule, thin and slender; the abdominal walls are flaccid, and the cavity appears to be too commodious for its contents. There is but little rigidity of the abdominal muscles, and when the patient stands the lower part of the abdomen shows a round protrusion. Gastroptosis can be demonstrated by the splashing sound, inflation of the stomach with gas, and by gastrodiaphany. The right kidney, both kidneys, the liver and the uterus are often also prolapsed. The principal part in the treatment consists in the application of a well-fitting abdominal supporter, ample nutrition and exercise. Electricity seems to be especially adapted, when administered intragastrically to cases in which there

are manifold functional disturbances of the stomach.—*N. Y. Medical Record, April 13, 1901.*

A NEW TEST FOR ALBUMIN.

Spiegler (*Centralbt. f. Klin. Med.*) describes a new test reagent, consisting of corrosive sublimate 8, trataric acid 4, distilled water 200, and glycerine 20. A few drops of strong acetic acid are added to the urine, which is then filtered, if any cloudiness (mucine) appears. Experiment shows that the amount of mucine left after the addition of the acid is too small to interfere with the reaction. The urine is then allowed to flow from a pipette along the side of the test tube upon the regent. A little white ring is formed at the junction of the liquid. If iodine is present in the urine the test is not quite so reliable, for a yellow ring forms, but this is soluble in alcohol. The author has thus found albumin in the urine of quite healthy people after mental excitement; also in minor ailments, especially in the neurotic. The extraordinary sensitiveness of the test is no disadvantage, even from a clinical standpoint, from the smallest excretion of albumen when it becomes constant is abnormal.

THE ETIOLOGY OF YELLOW FEVER.

Reed, Carroll and Agramonte (*Jour. Am. Med. Assn.*, Vol. 36, No. 7), offer an additional note to previous studies made by them. Their interesting article is summed up in these conclusions:

1. The mosquito—C. fasciatus—serves as the intermediate host for the parasite of yellow fever.

2. Yellow fever is transmitted to the non-immune individual by means of the bite of the mosquito that has previously fed on the blood of those sick with this disease.

3. An interval of about twelve days or more after contamination appears to be necessary before the mosquito is capable of conveying the infection.

4. The bite of the mosquito at an earlier period after contamination does not appear to confer any immunity against a subsequent attack.

5. Yellow fever can also be experimentally produced by the subcutaneous injection of blood taken from the general circulation during the first and second days of this disease.

6. An attack of yellow fever, produced by the bite of the mosquito, confers immunity against the subsequent injection of the blood of an individual suffering from the non-experimental form of this disease.

7. The period of incubation in thirteen cases of experimental yellow fever has varied from forty-one hours to five days and seventeen hours.

8. Yellow fever is not conveyed by fomites, and hence disinfection of articles of clothing, bedding or merchandise, supposedly contaminated by contact with those sick with this disease, is unnecessary.

9. A house may be said to be infected with yellow fever only when there are present within its walls contaminated mosquitoes capable of conveying the parasite of this disease.

10. The spread of yellow fever can be most effectually controlled by measures directed to the destruction of mosquitoes and the protection of the sick against the bites of these insects.

11. While the mode of propagation of yellow fever has now been definitely determined, the specific cause of this disease remains to be discovered.

A NEW STAIN FOR BLOOD CELLS.

Dr. Randle C. Rosenberger (*Phil. Med. Journ.*), finds the following stain for blood cells a very satisfactory one:

Saturated aqueous solution of methylene blue	50 c.c.
Saturated aqueous solution of phloxin	20 c.c.
Alcohol (95 per cent.)	30 c.c.
Water (distilled)	60 c.c.

This stain is also a fairly good one for the malarial parasite of any variety.

Gynecology and Obstetrics.

USE OF THE DOUCHE IN GYNECOLOGY.

Dr. F. C. Ferguson has written a paper (*Med. and Surg. Monitor*), in which he calls attention to the fact that the use of the douche in pelvic inflammation involves several factors. The degree of heat is very important. The first action of hot water upon living tissues is to dilate the blood vessels. This is followed by a slowing of the blood current and increased accumulation of blood in the parts subject to its action. If the heat be continued for a short time, contraction of the blood vessels follows, the rapidity of the current is increased, and the parts become anemic. It is upon this seconday action of heat upon blood vessels that the virtue of the hot douche depends. To secure this action the water must have a temperature of from 115° to 125°.

The length of time the douche should be continued at each sitting is also of prime importance. If it be discontinued under fifteen or twenty minutes, but little benefit will be secured. In most cases of pelvic inflammation a continued hot vaginal irrigation for one or two hours at each sitting will be found to give the best results. The posture of the patient while taking the hot vaginal douche is of great importance. The usual way of sitting or squatting over a vessel is the worst position she can assume. In such position the vagina is thrown into folds and its walls approximate closely together, so that it is impossible for the water to come into contact with any great area of the vaginal surface. The same objection applies to the dorsal position, only in a less degree. The best position is Sims', in which the vagina balloons out and its folds are obliterated. In this position the hot water is thrown directly against the roof of the vagina where it is most needed, and it irrigates every portion of the vaginal surface. The height of the fountain above the escape pipe merits consideration, both with reference to the quantity of water used and the comfort of the patient. The fountain should not be swung more than five or six inches above the pelvis of the patient. This gives a slow steady force, but carries as much to the parts as twice or three times the amount of water would carry when flowing with correspondingly greater force and quantity.—*Amer. Jour. of Surg. and Gyn.*

THE PREVENTION OF POST OPERATIVE ADHESIONS OF THE PERITONEUM.

Ward (*American Journ. of Obst.*) in a very able paper on post-operative peritoneal adhesions, summarizes as follows the means of prevention:

1. The attainment of asepsis as perfect as is possible by the rigid adherence to the most modern methods of securing surgical cleanliness.

2. The avoidance of raw surfaces and pedicle stumps by covering them with peritoneum or grafts of omentum, and the abandonment of ligatures en masse.

3. Protection from dry-air contact by the employment of moist asepsis instead of dry asepsis, and keeping the exposed parts covered whenever possible.

4. The time element—rapidity of operating by technical skill, thorough preparation and trained assistants.

5. Keeping up the heat of the peritoneal cavity by frequent renewal of the hot salt solution (115° F.), and by protection of the exposed parts.

6. Avoidance of excessive manipulations of the intestines by technical skill, proper ante-operative preparation of the bowels, and posture, to prevent pseudo-ileus.

7. Replacement of the loops of intestine and omentum by filling the abdominal cavity with hot salt solutions before closing, and thus floating them, that they may more readily adjust themselves in their proper relations.

8. Free motion of the patient after the operation to be encouraged instead of prohibited.

9. Early use of the high enema (during the first twelve hours) in conjunction with cathartics, and, on failure, the prompt use of oxygen in the Trendelenburg posture.

The author has, from study of adhesion formation and the best means of their prevention, come to the following conclusions:

1. That peritoneal adhesions after operation result from several causes.

2. That, therefore, we cannot depend upon any one preventive method but, recognizing their multiple etiology, we must employ all the details of operative technique that are necessary to offset the various causes.

3. That this necessitates a technical skill that can only be attained by a long apprenticeship and a thorough training in abdominal surgery.

ANTEFLEXION OF UTERUS.

Kingman (*Annals of Gyn. and Ped.*) thinks the following operation gives promise of recovery. The procedure is comparatively easy. The result may be accomplished through a short incision by the following simple technique: The patient being in the Trendelenberg position, the bowels are pressed out of the way with gauze and are held back with a broad retractor, which is carried to the bottom of Douglas' pouch. Finding the point of insertion of the ligaments on the posterior uterine wall, this point is seized with a pair of bullet forceps. Traction is now made and the ligaments are put on the stretch, the body of the uterus being held forward out of the way by the forceps. Each ligament is now raised in turn with a blunt hook, and is freely divided near its uterine attachment. Any remaining fibers are felt with the finger and divided in the same manner. For protection against hemorrhage and to avoid denuded tissue in the pelvis, the edges of the peritoneum are brought together by a few catgut sutures. The uterus is now lightly suspended by two chromicized catgut sutures through the fundus, according to the degree of flexion. This keeps the divided ligaments apart until they have healed, and so guards against a relapse. Dysmenorrhea and backache are usually relieved in large measure, if not wholly abolished; bladder irritability, aside from actual cystitis, yields at once; sterility is overcome in a fair percentage of cases, and the progressive endometritis and parametritis are cut short in a much larger number. As for the cases in which pregnancy supervenes, nausea and vomiting, if they occur at all, are certain to be much less severe than would

have been the case had the tight ligaments remained to tie back the cervix in the hollow of the sacrum, and they yield readily to local treatment.—*The Monthly Cyclopedia.*

THE GYROMELE IN THE DIAGNOSIS OF STOMACH AND INTESTINAL DISEASES

Fenton B Turck, of Chicago, describes the gyromele (revolving sound), as a flexible steel cable, terminating in a more flexible spiral end. This spiral end is provided with a metallic pellet, and covered by a sponge, lamb's wool or cotton. The sound is fastened in a revolving apparatus—not unlike a surgeon's drill. The flexibility of the sound is of such a degree as to adapt itself accurately to the situs, shape and size of the organ. By means of the revolving apparatus vibrations are produced which can be palpated and auscultated externally, thus giving information of its location. This can also be verified by the X-rays. Percussion of the inflated stomach is thus rendered more exact since its border-line can be thus established, and the finer differences of sound between the stomach and intestine distinguished. For bacteriologic examinations the cable is enclosed in a tube and the end covered with a rubber cup, to which is attached a string by which it can be pulled off when the desired point is reached. After making the culture, the cable is drawn into the tube and the instrument withdrawn.—*Journal A. M. A., May 4, 1901.*

AMERICAN ASSOCIATION OF ORIFICIAL SURGEONS.

The American Association of Orificial Surgeons will hold its next annual meeting in Chicago, September 18th and 19th, 1901. Although quite separate, Prof. Pratt's "Clinic" will be held the same week, beginning September 16th. To those familiar with orificial methods and their practical application to the cure of chronic diseases, no special appeal need be made, other than to urge their presence or attendance at this meeting, as it promises to be one of the best held since the organization of the Association. Lectures and papers have been promised by some of the most prominent medical men of the country. The discussions will be lively and interesting and one's own knowledge of the work will be brightened and widened. To those who are not familiar with orificial ideas, theories and practices, we can say that there can be no more auspicious time to gain a practical knowledge of orificial surgery than at this meeting of the Association. The whole field will be brought within reach.

Due attention will be given to preparatory work, and fundamental principles thoroughly expounded and illustrated by some of the brightest surgeons of this country. Due attention will be given to after-treatment, therapeutical and otherwise. Papers and discussions will embrace the whole idea and give the sum and substance of more than fifteen years work along lines that have yielded prodigious success to the surgeon and general practitioner. No live man can now afford to ignore orificial surgery or be absent from this meeting.

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